

TRB EMS Subcommittee ANB10(5)

## EMS Safety Summit 2012 Safety Systems, Strategies and Solutions

**A leading edge approach integrating  
ergonomics, automotive safety and cost  
efficiency**

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Oslo and Akershus ambulance service

### New Sprinter 319



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## The Norwegian ambulance service

- Part of the specialist health service
- A public service
- A mix between public operated services and contractors
- Minimum competence: EMT (4 years education)
- In cities / larger services; Paramedic + one EMT (Paramedic = EMT + 2 year practice + 1 ½ (2 ½) year at a university college)
- From Q3/2013 the Paramedic education will be a 3 year bachelor degree study
- All crew need a special driver license
- A tradition to use smaller vehicles than USA and UK.

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## National tender for purchasing ambulances

- Must fulfill all laws and regulations
- EN 1789 standard as a minimum
- Special requirements:
  - Focus on safety
  - Focus on hygiene / easy to keep clean
  - Heating and A/C
  - Lights in the patient compartment shall comply to EN12464-1 (500Lx / CRI >80 / 3400-4300 K color temp.)
- The attendant should reach all basic equipment, communication, light and climate controls without releasing the safety belt.

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Science X Education X Implementation = Survival

1 x 1 x 1 = 1

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## Focus points

- Safety
- Ergonomic
- Hygiene
- User friendly

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## Safety

- Vehicle

- All electronic safety systems:
  - A-ESP, ABS, etc.
- Crashworthiness:
  - Original chassis
  - Airbags (front, thorax, curtain)
  - Seat belt tensioner
- Internal passive safety
  - Impact zones
  - No sharp edges
  - Securing equipment



## Safety

- Interior

- In the drivers compartment controls for blue lights and siren are close to the steering wheel
- Hands free solution for the Tetra radio and mobile phone
- Dual radio controls (drivers compartment and patient comp.)
- All equipment secured



## Safety



## Ergonomics

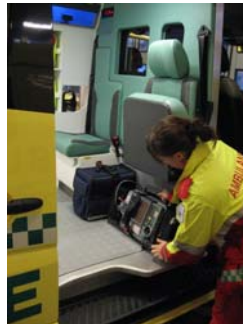
- All necessary equipment should be reach from the seats without losing the seat belt
- The focus are on the attendant and the patient



- The stretcher platform can be moved into 3 different positions



- Most of the equipments needed outside the ambulance can be reach without going into the vehicle



- The heaviest equipment are placed low



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## Drivers compartment

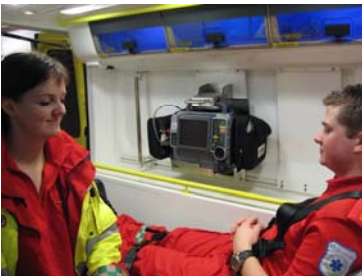
- Controls for blue light and siren close to the steering wheel + PTT for TETRA radio
- Space for helmets, jackets and bag for personal equipment



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## Hygiene

- All surfaces are easy cleaned
- Edges are sealed against ingress of fluids



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## User friendly

- All necessary equipment should be reach from the seats without loosing the seat belt



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- Conceptual changes takes time
- You must work with the operational crews
- Respect their opinion, try to guide them in the right direction
- The users need to feel the own the final product
- BUT! Safety for all involved takes priority over everything else!
- You might need to educate your crew before you start a development process
- Collect all necessary documentation and make it public

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